



Docket No. 00-003

CLAIMS

What is claimed is:

- Sub a* 1. A device for adjusting the position of a cutting insert adjustably secured in a pocket disposed in a cutting tool body, comprising:
5 a cavity in said cutting tool body, at least a portion of said cavity being contiguous with the pocket;
 an intermediate component disposed within said cavity and comprising an external peripheral surface and at least one expansion mechanism, said external
10 peripheral surface engaging the insert at said contiguous portion; and
 a wedging device movably attached to the cutting tool body and engaging the intermediate component such that actuation of the wedging device results in expansion of the intermediate component in a direction substantially parallel to a desired direction of adjustment of the insert.
15 2. The device of claim 1, wherein said expansion mechanism comprises slots and a tapered portion disposed on a first region of an internal peripheral surface of said intermediate component.
Sub a 3. The device of claim 1 wherein said wedge device comprises a conical wedge.
4. The device of claim 3 wherein said wedge device includes an adjustment screw
20 threadingly engaged to the tool body.
5. The device of claim 1 wherein said intermediate component defines a portion of a pocket side of said pocket.

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6. The device of claim 1 wherein the intermediate component further comprises a plurality of end faces, each end face being intersected by at least one of said expansion elements.

7. The device of claim 1 wherein actuation of the wedging device causes expansion
5 of the intermediate component along substantially the entire length of said component.

8. The device of claim 3 wherein said conical wedge is tapered at an angle of between about 30° to 5°.

9. The device of claim 3 wherein said intermediate component comprises an
10 internal peripheral surface having a tapered portion for engaging a side of said conical wedge.

10. A device for adjusting the position of an insert relative to a cutting tool body,
comprising:

a retaining device including a pocket in said tool body having a pocket floor
15 and pocket sides for adjustably securing said insert;

a sleeve disposed in a cavity in said tool body, said cavity being at least partially contiguous with said pocket, said sleeve engaging a flank of said insert;

an adjustment screw engaging said sleeve such that actuation of said screw causes expansion of the sleeve along substantially the entire length of said sleeve
20 exerting translational force on said insert flank thereby adjusting a position of the insert in relation to said tool body.

11. The device of claim 10 wherein said adjustment screw comprises a wedge in engagement with said sleeve
12. The device of claim 11 wherein said wedge is conical.
13. The device of claim 12 wherein said conical wedge is tapered at an angle of
5 between about 30° to 5°.
14. The device of claim 12 wherein said sleeve includes tapered portion for engaging a side of said conical wedge.
15. The device of claim 10 wherein said sleeve comprises slots and a tapered portion disposed on a first region of an internal peripheral surface of said sleeve.
- 10 16. The device of claim 10 wherein said retaining device includes a clamping screw threadingly engaged to the tool body for securing said insert to said tool body.
17. The device of claim 15 wherein the sleeve further comprises a plurality of end faces, each end face being intersected by at least one of said slots.
18. The device of claim 10 wherein said cutting tool is a rotary cutter.
- 15 19. An adjustable tool assembly comprising a tool body having a removably attached cartridge and an insert adjustably secured in a pocket in said cartridge, the tool assembly further comprising an adjustment device for transmitting axially outward-directed force to the insert, whereby the adjustment device allows fine adjustment of positioning of the insert on the tool body; the adjustment device comprising a cavity in said cartridge, at least a portion of said cavity being contiguous with the pocket;

an intermediate component disposed within said cavity and comprising an external peripheral surface and at least one expansion mechanism, said external peripheral surface engaging the insert at said contiguous portion; and

- 5 a wedging device movably attached to the cartridge and engaging the intermediate component such that actuation of the wedging device results in expansion of the intermediate component in a direction substantially parallel to a desired direction of adjustment of the insert.

Sys a⁽³⁾ 20 A method for adjusting the position of an insert relative to a cutting tool body, wherein said tool body has a retaining device including a pocket having a floor and

- 10 sides for adjustably securing the insert to said tool body, comprising the steps of:
 positioning an insert in a pocket in engagement with an intermediate component secured in a cavity contiguous with said pocket, the intermediate component comprising an external peripheral surface and at least one expansion mechanism, said external peripheral surface engaging the insert at said contiguous
15 portion;

 tightening the retaining device to adjustably secure the insert in the pocket;
and

 actuating a wedging device, said wedging device being in engagement with the expansion mechanism, thereby causing expansion of the intermediate
20 component resulting in change of position of the insert.

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